# 5 FAH-5 H-100
# INFORMATION TECHNOLOGY SYSTEMS

# 5 FAH-5 H-110
# DEVELOPING AND MANAGING DEPARTMENT OF STATE PROJECTS

*(TL:ITS-1; 02-13-2002)*

## 5 FAH-5 H-111 GENERAL POLICIES

*(TL:ITS-1; 02-13-2002)*

a. All Department of State personnel involved in project development must follow the procedures outlined in this handbook. Development projects may include prototyping, maintenance enhancements, integration, modification, Commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) products.

b. All projects must be defined by a project plan that includes the name of the project manager (see 5 FAH-5 H-213).

c. Project managers must adhere to the policies established in 5 FAM 600 for Managing State Projects (MSP), the implementation procedures in this handbook for project management techniques and the technical disciplines associated with managing projects throughout the life cycle.

d. Project managers must monitor contractors in accordance with the Acquisition Reform Initiative that outlines standards for performance-based service contracting (see 5 FAM 614). Management of contractors who develop software products requires a clearly defined statement of work with an understanding of "what" the U.S. Government expects in a deliverable, with standards and control gates to ensure accurate production and timely delivery.

e. All project development efforts must be certified by DS/IST/ACD before implementation (see 5 FAM 619).

f. Data Administration support must be sought for all projects with a life cycle cost in excess of $750,000, or any system initiative costing more than $250,000 and it must be coordinated with IRM/OPS/SIO/API/DA to ensure consistency with the Department's enterprise data model (EDM), (see 5 FAH-5 Table H-313 (1)).

g. A benefit cost analysis (BCA) is required for projects that exceed $100,000. Projects with life cycle costs under $10 million dollars may be justified using a simplified BCA. See 5 FAH-5 H-600.

# 5 FAH-5 H-112 PURPOSE AND SCOPE

*(TL:ITS-1; 02-13-2002)*

a. This Handbook implements the policy in 5 FAM 600*, Information Technology (IT) Systems*, which establishes the effective and efficient development and maintenance of Department of State information technology (IT) systems.

b. These procedures carefully direct managers through the managing state projects (MSP) techniques to plan and manage resources more effectively, to prepare for program reviews, and to build an historical archive to more accurately estimate costs on future projects.

c. This Handbook is the Department's tool for managing development projects used in outlining the minimum requirements and procedures for project management, data administration, quality assurance, configuration management, and the benefit cost analysis process.

# 5 FAH-5 H-113 DEFINITIONS

*(TL:ITS-1; 02-13-2002)*

**Accreditation manager**—The person responsible for coordinating the certification and accreditation (C&A) process, i.e., to guide actions, document decisions, identify possible solutions, and maintain operational systems security.

**Attribute**—An item of data, a fact, or a single piece of information about an entity that quantifies, identifies, classifies, or describes that entity.

**Benefit cost analysis (BCA)**—A project development technique used as a systematic approach for comparing alternatives in project development; see also simplified BCA.

**Business process model**—A graphical and semantic representation of a group of logically related tasks that use the resources of the organization to provide defined results in support of the organization objectives.

**Capital expenditures—**Costs incurred for purchasing capital assets or tangible property, including durable goods, equipment, buildings, installations and land.

**Capital planning—**A systematic effort to manage the risks and returns of capital assets for a given mission.

**Capital planning and investment control (CPIC) process**—A process for approving funds for projects where risks and returns of capital assets meet the Department's goals for capital planning.

**Certification and accreditation (C&A)**—The process of ensuring that a system meets all security requirements to operate in the appropriate environment at a specified classification level and with a limited level of risk.

**Commercial off-the-shelf (COTS) software—**Commercially available applications sold by vendors through public catalogue listings; COTS software is not intended for customization or enhancement.

**Concept of operations document (CONOPS)—**A detailed document that defines and establishes the human-to-machine workflow of the product for the operational environment.

**Configuration management (CM)—**The process of identifying and defining the change control items in a system, controlling the release and change of these items throughout the system life cycle, recording and reporting the status of configuration items and change requests, and verifying the accuracy and completeness of configuration items.

**Control gate**—A management review process in the project cycle designed to examine and evaluate project status (milestones) and to determine if the project will proceed to the next management event.

**Data administration (DA)—**The Department's management of the development, standardization, maintenance, and approval of data elements for use in IT systems development projects.

**Data element**—A named identifier of each of the entities and their attributes represented in a database.

**Data element standardization**—The process of documenting, reviewing and approving unique names, definitions, characteristics and representations of data elements according to established procedures and conventions.

**Data mapping—**A method used to identify and link selected data to one or more equivalent standard data elements.

**Data modeling**—Identifies informal graphical and textual representation and the entities and relationships involved in a data process; provides a mechanism to understand the intended activity of a new system and in designing the data.

**Designated approval authority (DAA)—**The senior accountable official for IT security who has the authority to formally assume the responsibility for systems operation and risk.

**Enterprise data model (EDM)—**The Department of State EDM consists of statements of business requirements and related data facts represented graphically and semantically in a set of structured views: enterprise scope view, enterprise business view, and enterprise system view. Each view represents the enterprise business requirements in various level of detail.

**Entity—**A specific representation of a person, place, thing, concept, or event about which a business retains information. Also referred to as business entity or entity type.

**Information system**—A set of resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information.

**Information technology change control board (IT CCB)—**The centralized body of knowledgeable personnel with the appropriate authority to evaluate the routine and emergency changes that impact the current and future operational stability or maintainability of IT assets controlled, managed, or supported by the Department of State.

**Knowledge management**—A fundamental strategy or discipline that allows managers to analyze the total value of their organizations to develop a competitive edge for innovation, response to problems or opportunities, and improve overall corporate intelligence.

**Life cycle cost**—The overall estimated cost of a project development effort over the time period established as the life of the project, including initial costs and other periodic or continuing costs for operation and maintenance.

**Life cycle development**—A process consisting of selected periods, phases, and control gates based on project type, which results in a defined end product or service.

**Managing state projects (MSP)—**A specific project management method consisting of periods, phases, activities, and control gates, designed specifically for the Department of State.

**Metadata—**Data that describes the characteristics of data (e.g., business name, description, data type, data length, and domain).

**Performance-based service contracts**—Contracts that describe work in terms of results needed. These contracts use measurable performance standards, and provide for price reductions when acceptable work is not performed.

**Performance measures**—Indicators of progress toward achieving goals and objectives.

**Product assurance manager**—The person responsible for coordinating quality assurance and configuration management issues and ensuring that all issues are resolved prior to implementation.

**Project plan**—A documented collection of achievable goals that establishes a beginning and end; groupings of milestones and tasks. In MSP, a collection of control gates based on a work breakdown structure outlining tasks.

**Quality assurance (QA)—**A process consisting of features and functions used in project development to ensure that the system is reliable, authentic, and meets all the requirements of the quality assurance plan.

**Repository—**A specialized type of database containing metadata that is managed by a data dictionary system; a storehouse of information describing the characteristics of data.

**Risk—**The potential for encountering security or negative technical, cost, or schedule impacts on a project.

**Risk management—**A method to identify and evaluate risks associated with a project and incorporate solutions into planned project goals.

**Simplified BCA**—A scaled down version of the BCA that focuses only on those elements of a BCA that the project manager deems relevant to the project.

**Standard data element (SDE)**—A specific attribute whose properties are defined uniquely and accepted by all data users across the Department of State. It is an individual piece of information having a unique meaning and distinct units or values. It may be stored in a physical medium, such as a database, or on a paper form.

**System—**A combination of hardware, software, facilities, personnel, data, and services to perform a designated function with specified results to user(s).

**Task manager—**The person on the project team responsible for ensuring completion of tasks in the work breakdown structure of the project plan; the individual responsible for managing a task or cost account.

**Validation—**The generic term that applies to the whole range of data quality issues, from elimination of duplicate records to compliance with format standards to matching values with reference tables.

**Vendor—**A supplier of material or services sold from a catalog or price list; material or service is covered by a purchase order rather than a contract.

**Work breakdown structure (WBS)**—An actual plan and account of all the elements involved in building a project from the beginning to the end by defining, organizing, scheduling, budgeting, and controlling each task associated with the project.

# 5 FAH-5 H-114 AUTHORITIES

*(TL:ITS-1; 02-13-2002)*

The authorities establishing these procedures are as follows:

(1) Pub. L. 96-511, Paperwork Reduction Act, as amended;

(2) Pub. L. 104-106, Information Technology Management Reform Act of 1996;

(3) Pub. L. 103-62, Government Performance and Results Act of 1993;

(4) OMB Circular A-130, December 12, 2000;

(5) Presidential Decision Directive (PDD) 63, May 22, 1998;

(6) Federal Acquisitions Regulation (FAR) 7.102 and 10.002;

(7) FAR, Subsection 37.6;

(8) FAR, Part 52.239-1; and

(9) Executive Order 12958, Classified National Security Information, April, 1995.

# 5 FAH-5 H-115 ROLES AND RESPONSIBILITIES

*(TL:ITS-1; 02-13-2002)*

a. Roles and responsibilities must be clearly defined for a project to be successful. In the roles and responsibilities listed below, one person may perform multiple roles or several members of the project team may work together to fulfil one role. Duties may vary based on the nature of the project.

b. Although the sponsor or user and/or customer is identified and executive management must approve and commit funds for the project, the project manager is the focal point through the project's life cycle for managing project resources and activities to meet technical objectives and satisfy user requirements, within well-defined cost and scheduled allowances.

c. Most of the roles and responsibilities associated with new or enhanced projects are predetermined based on the organizational structure and business need. The requirements, rules and responsibilities will vary from project to project.

d. Other roles and responsibilities for a U.S. Government project office, functional managers, contractors and/or vendors, source evaluation board, and other personnel are identified during the acquisition phase when contractors or vendors are required. (See 5 FAH-5 H-217.2 *Acquisition Period).*

## 5 FAH-5 H-115.1 Project Manager

*(TL:ITS-1; 02-13-2002)*

a. Responsibility and accountability in successful project management for the various types of development efforts are assigned to the project manager. This responsibility is vital to meeting user and/or customer needs, to project cost, to schedule objectives, and to satisfy the user and executive management.

b. Project managers coordinate the work of all the disciplines involved, i.e., technical issues, configuration management, and quality assurance.

c. Working primarily with the project team, project managers are responsible for the appropriate involvement of executive management, sponsor, user and/or customer, product assurance manager, data administrator, contracting officer and Contracting Officer Representative (COR), and the U.S. Government project office.

d. Project managers should have prior task management experience with successful results and/or formal training in the Managing State Projects (MSP) concept.

## 5 FAH-5 H-115.2 Project Team

*(TL:ITS-1; 02-13-2002)*

a. The project manager supervises the project team. Team members must understand the requirement in order to research and analyze user requirements and ultimately design, develop, and test the deliverable or outcome; or analyze, test and accept the deliverable when developed, modified, or integrated by a contractor or procured as a COTS or GOTS product.

b. A typical team may consist of a project manager, sponsor, user and/or customer, data administrator, quality assurance manager, configuration management officer, security officer and any other members deemed appropriate by the project manager.

## 5 FAH-5 H-115.3 Sponsor

*(TL:ITS-1; 02-13-2002)*

The sponsor represents the user and their organization in the Department. Primary duties include:

(1) Interacting with the project manager and others outside of the sponsor organization;

(2) Coordinating user participation when necessary;

(3) Participating in reviews; and

(4) Providing input for final review and approval of end product.

## 5 FAH-5 H-115.4 User and/or Customer

*(TL:ITS-1; 02-13-2002)*

The user and/or customer is anyone in the sponsor organization who uses the end product or service. The user and/or customer presents requirements based on the business need. The needs are devised by way of conducting interviews and providing input that justifies the specific need. The user and/or customer must sign and accept the system, product, or service after requirements are satisfied.

## 5 FAH-5 H-115.5 Data Administrator

*(TL:ITS-1; 02-13-2002)*

The data administrator provides the control mechanisms for using accurate, effective, and efficient corporate data. They provide a central reference source to direct people where to obtain data in the Department, and coordinates with the Data Administration Working Group (DAWG) on behalf of the project team (see 5 FAH-5 H-300, *Data Administration*).

## 5 FAH-5 H-115.6 Quality Assurance Manager

*(TL:ITS-1; 02-13-2002)*

The quality assurance (QA) manager develops the QA plan for the project. The QA manager defines quality assurance procedures at the beginning of the project for application throughout the life cycle. The QA officer ensures that the product or service meets the quality and functional standards expected by the user and/or customer (e.g., reviews, approvals, walkthroughs, and testing). See 5 FAH-5 H-400, *Quality Assurance*.

## 5 FAH-5 H-115.7 Configuration Management Officer

*(TL:ITS-1; 02-13-2002)*

The configuration management officer documents and manages the configuration baseline and change control process, i.e., maintains a file on each system which contains configuration identifiers, development requests, products or services of the project development process, and change notices (see 5 FAH-5 H-500, *Configuration Management*).

## 5 FAH-5 H-115.8 Security Officer

*(TL:ITS-1; 02-13-2002)*

The security officer ensures that all security standards, procedures, and guidelines are in place for reducing risk or compromise during the life cycle for all projects. The security officer also keeps abreast of all security awareness issues, and documents security reviews for project requirements to ensure direct compliance.

# 5 FAH-5 H-116 REVIEW BOARDS

*(TL:ITS-1; 02-13-2002)*

a. The Department has established IT review boards to evaluate and approve certain projects. The boards determine if projects will benefit the mission of the Department as outlined in the Department's *Strategic Plan.*

b. The Information Technology Program Board (ITPB) reviews projects with a life cycle cost of $30,000,000 or more, or those determined by the Under Secretary for Management to be of critical importance to the mission (see 5 FAM 616).

c. The Management Review Advisory Group (MRAG) and the Technical Review Advisory Group (TRAG) reviews projects with life cycle values of less than $30,000,000. (See 5 FAM 616.)

d. In the Department, a Benefit Cost Analysis (BCA) is required for all projects valued at over $100,000. (See 5 FAH-5 H-600.)

# 5 FAH-5 H-117 SECURITY CERTIFICATION

*(TL:ITS-1; 02-13-2002)*

a. All projects must undergo certification and accreditation. The purpose of certification is to ensure that ongoing practices and safeguards are in place to protect the information at risk.

b. Managers must exercise security practices and awareness to minimize or reduce the risks of misuse, destruction, or unauthorized disclosure of data or compromise in the case of classified or SBU projects. Proper security measures in project development must be in place to:

(1) Determine applicable requirements, standards, procedures, and guidelines; and

(2) Ensure that the system addresses security functions and features; and

(3) Conduct and document security reviews and walkthroughs ensuring compliance.

c. Security certification and accreditation must be obtained prior to implementation in accordance with DS/IST/ACD procedures.

# 5 FAH-5 H-118 ACQUISITION

*(TL:ITS-1; 02-13-2002)*

a. Project managers must ensure that contracting activities are reviewed, analyzed, and evaluate incoming procurement requests for selections based on results-oriented, service-based contracts that specifically respond to the Government's Statement of Work (SOW), which will define the requirements in terms of measurable deliverables.

b. Contents of the final acquisition plan are key to ensuring that new project efforts are developed in accordance with the Department's acquisition reform initiative. (See 5 FAH-5 Exhibit H-217.2(1)).

# 5 FAH-5 H-119 RISK MANAGEMENT

*(TL:ITS-1; 02-13-2002)*

a. Risk management practices are extremely helpful to the project team in determining how projects may be impacted because of various risks. The elements of risk management, (i.e., risk analysis and risk assessment) will allow the project team to plan to combat potential risks and increase the success rate by:

(1) Identifying problems and solutions early;

(2) Avoiding surprises and failures; and

(3) Minimizing scheduling slips.

b. Effective planning should provide a general understanding of how to manage technical costs and schedule risks.

c. Project managers must factor into the work breakdown structure (WBS), the necessary steps to mitigate risks that have been identified and incorporate them into the project plan. Managers should also seek ways to avoid or mitigate those same risks in other areas of the project.

d. *Project Management*, 5 FAH-5 H-200, discusses all the elements involved in effective project requirement management. The chapter also reveals how to minimize risk and assist in planning by applying the MSP management principle.